APPENDIX 5

APD CONDITIONS OF APPROVAL DATA PREPARATION

The Inventory included a large-scale statistical sampling and categorization of COAs and related data for APDs.

The data preparation consisted primarily of the creation of a Federal oil and gas permit/well GIS point data theme. This task was performed by processing legal description data from the BLM's AFMSS against the PLSS dataset collected as described in Appendix 3. Data gathering, compiling, categorizing, digitizing and analysis followed as described below.

1. Excel spreadsheets were used to collect the COA data during visits to the BLM Field Offices (FO) listed in Table A5-1. They included attributes from the AFMSS database identifying lease number, surface location legal description (including footage calls, if available), surface managing agency, operator name, well name, well number, well type, received date, approval date, spud date, and completion date. The MTB study area was not included because it is approximately 97 percent closed to access and has little drilling history. SAK, EOW and the FLP were also excluded given the relative lack of drilling history.

Table A5-1. Study Areas Sampled for COAs

2. All APDs approved between and including the dates of October 1, 1999 and September 30, 2004 were included. Wells on non-Federal minerals within Federal agreements and on Indian lands were excluded. The COAs and related data were collected from approved APDs issued by the BLM FOs (Table A5-2) wholly or partially within the study areas. This well/permit data theme was then spatially intersected with the study area polygons to eliminate points outside of their boundaries. The distribution of the resultant APDs was then geographically mapped.

Table A5-2. BLM Field Offices for which COAs Data were Abstracted

3. The above data theme was then randomly sampled to generate a new GIS point data theme. A stratified random sampling method was used with two data strata: BLM FO and surface managing agency. The samples from each stratum were weighted by total APDs approved for each FO. The resultant total sample was approximately 10 percent of the total population of APDs and followed the guidance presented on Table A5-3.

Table A5-3. Stratified Random Sampling Guidance

4. Contractor personnel, accompanied by BLM personnel, visited BLM FOs and abstracted COA and other related information from the hardcopy well files identified by the sampling process. Those offices whose sample count within the study areas

fell below six were generally not visited. Instead, the FO was requested to transmit the COAs to the BLM Washington Office where they were examined.

The abstracted information contained site-specific restrictions or impediments that affect the ability of the permittee and/or lessee to access the underlying lease for the purpose of exploring for and developing oil and gas resources. All abstracted information was restricted to Federal lands and limited to the 13-point surface use plan of the APD and related documents.

5. Other relevant information for the study was obtained through interviews held with FO personnel. This information was essential to determine the extent, through a qualitative analysis, of negotiations that occur prior to the submission of an APD, including adjustments at the time of well staking. This included the determination of:

- Whether applicant-funded surveys (e.g., wildlife or archeological) are a prerequisite to acceptance of an APD as administratively complete (Table A5-4a).
- The number of APDs not actually applied for because the cumulative effects of lease stipulations and probable COAs were prohibitive (Table A5-4b).

Table A5-4a. Findings from Interviews with BLM Field Personnel – Applicant Funded Surveys

Table A5-4b. Findings from Interviews with BLM Field Personnel – Prohibitive Lease Stipulations/COAs

6. COA data were compiled into spreadsheets and spatial displays (GIS, etc.) that can be used to assist BLM management in decisions regarding APD approvals. The compilation process consisted of grouping of COAs by class (e.g., wildlife, soils, archeological, construction, sage grouse, etc.), and subsequent assignment of a unique identifier for each type of COA within a class. Only COAs that were more restrictive than (and not merely a restatement of) the stipulations on the underlying lease were considered.

7. A total of 226 unique COAs were identified which were then categorized by the Interagency Steering Committee. The categorization was performed relative to the COAs' impact on access to oil and gas resources. The result was that COAs fell either into controlled surface use (CSU) or cumulative timing limitation (TL) categories that correspond with the leasing hierarchy described in Table 2-8. Changes in land access categorization arising from COAs were integrated into the spatial model. This recategorization methodology consisted of first computing for each unique COA the percentage of wells having that COA (% unique-COA) with respect to the total number of wells sampled within a given FO and also within the non-NSO leasable areas as represented by the equation:

$$\% uniqueCOA = \frac{(\#Wells)_{uniqueCOA}}{(\#Wells)_{Acc.Area}}$$

Where:

$\%uniqueCOA$	:	Percentage of wells with a unique COA
$(\#Wells)_{uniqueCOA}$	:	Number of wells with a unique COA
$(\#Wells)_{Acc.Area}$	:	Total number of wells in the accessible area.

Table A5-5 is a breakdown of the COAs by BLM FO and includes the categorization, number of occurrences, and percentage of the wells in the sample that have that COA.

Table A5-5. COA Statistics by Field Office

Table A5-5 (concluded). COA Statistics by Field Office

8. Subsequently this percentage value was extrapolated to the overall leasable area to estimate the change in accessibility. A grid composed of 400 by 400 meter cells (approximately 40 acres) was created for each FO or NF containing a study area. Cells were then randomly selected at the previously calculated percentage rate to create a potential access constraint theme. Figure A5-1 illustrates the process to extrapolate the effects of COAs on accessibility. This is an example for a case where 10 percent of the leasable area is potentially subject to a particular COA type.

Figure A5-1. Example of Extrapolating the Effects of COAs on Accessibility

9. Once the recategorization was accomplished, the resulting areas and volumes of the undiscovered technically recoverable oil and gas resources and reserve growth affected by the cumulative impact of COAs were computed. The land access categorization was then performed using the method for lease stipulations described in Section 2 and Appendix 9.